



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,428	11/21/2001	Noboru Iwata	49443DIV (70904)	4238

21874 7590 04/29/2003

EDWARDS & ANGELL, LLP
P.O. BOX 9169
BOSTON, MA 02209

EXAMINER

BERNATZ, KEVIN M

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 04/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Amendment

1. Preliminary amendments to the specification and claim 1, filed on November 21, 2001 and April 14, 2003, have been entered in the above-identified application.

Examiner's Comments

2. The examiner notes that applicants' claims contain several relative terms. These terms have not been deemed indefinite, but have been given the broadest reasonable interpretation when evaluating the prior art. These terms include:

- "a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer" – "relatively small" and "relatively large" have been interpreted to simply require the one value to be bigger or smaller than the other (e.g. a difference of 0.00001% would still meet the limitation since "relatively" has not been defined in terms of a specific magnitude); and
- "predetermined temperature" has been interpreted to be any temperature from $-\infty$ to $+\infty$; and
- "predetermined intensity" has been interpreted to be any intensity from $-\infty$ to $+\infty$; and
- "a larger magnetic wall coercivity at a rear part of the light beam spot than a front part" has been interpreted as above with respect to the term

"relatively", and the terms "rear part" and "front part" have been interpreted as follows: "rear part" refers to any spatial location within the rear half of the light beam spot and "front part" refers to any spatial location within the front half of the light beam spot (wherein the light beam spot can be either the round spot or the elongated spot which results during rotation of the media).

Election/Restrictions

3. Applicant's election without traverse of Group I, claim 18 in Paper No. 7 is acknowledged. Claims 17 and 19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention. This election has therefore been made **FINAL**.

Specification

4. The disclosure is objected to because of the following informalities: the continuation data should be updated to reflect the allowed patent number (i.e. 6,352,765 B1). Appropriate correction is required.
5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claim 18 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 12 of Iwata et al. (U.S. Patent No. 6,352,765 B1).

8. Claim 18 is also rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 30 - 32 of Hirokane et al. (U.S. Patent No. 6,150,038).

9. Although the conflicting claims are not identical, they are not patentably distinct from each other because both Iwata et al. and Hirokane et al. claim a magneto-optical recording medium comprising at least a first magnetic layer, a second magnetic layer and a third magnetic layer, which are layered in this order (*Iwata et al.* - claim 12, lines 1 - 4; *Hirokane et al.* - claim 31, lines 1 - 6), wherein said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in the vicinity of a

Art Unit: 1773

predetermined temperature (*Iwata et al.* – claim 12, lines 4 – 8; *Hirokane et al.* – claim 31, lines 6 - 10), and means for irradiating a light beam to a predetermined temperature during reproduction, thereby heating the first magnetic layer to the compensation temperature or higher (*Iwata et al.* – claim 12, lines 16 – 23; *Hirokane et al.* – claims 30 and 32).

Neither *Iwata et al.* nor *Hirokane et al.* explicitly claim “said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot”.

However, it has been held that where claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established and the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC 102 or on *prima facie* obviousness under 35 USC 103, jointly or alternatively. Therefore, the *prima facie* case can be rebutted by **evidence** showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). “When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.” *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In the instant case, the prior art product is substantially identical in structure and function and is deemed to inherently meet the claimed invention based on Figure 1, below.

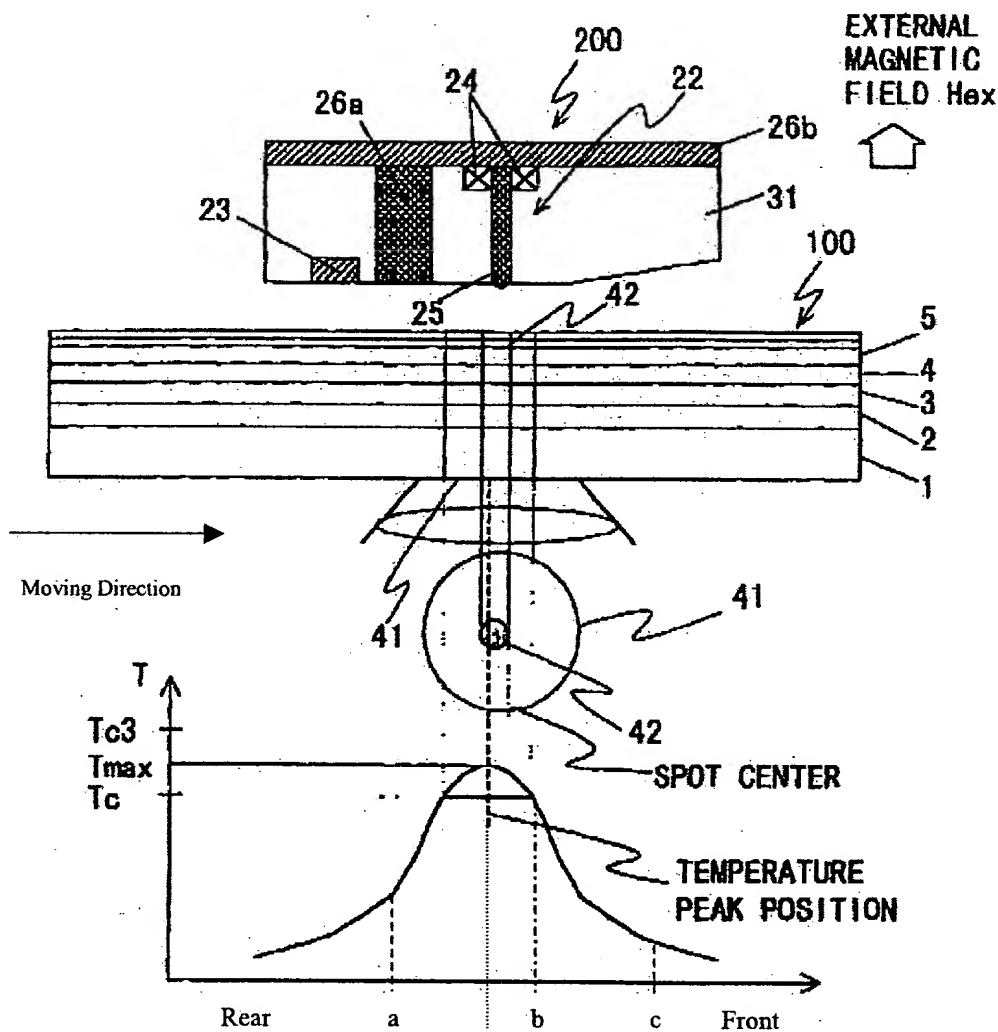


Figure 1: Illustration of temperature distribution in a magneto-optical recording medium.

Given the temperature profile that develops (even if slightly different than the perfect gaussian distribution illustrated above), the examiner notes that a point <a> "at a

Art Unit: 1773

rear part of the light beam spot" will have both a point and <c> with temperatures greater and lower than it, respectively. Since the wall coercivity is a function of temperature (see *applicants' specification, pages 5 – 10 – as T increases to the compensation temperature, H_w becomes large*), the Examiner notes that at least one of points or <c> will inherently meet applicants' claimed limitation of "said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot" (see also pertinent prior art cited below – Miyamoto et al.).

Therefore, in addition to the above disclosed limitations, the presently claimed property of said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot would have inherently been present because the claimed and prior art products are substantially identical in structure, and the fact that a gaussian temperature profile develops would inherently result in a wide range in wall coercivity values in both the front and rear parts of the light beam.

Claim Objections

10. Claim 18 is objected to because of the following informalities: insert "the" between "in" and "vicinity of a predetermined temperature". Appropriate correction is required.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claim 18 is rejected under 35 U.S.C. 102(a) as being anticipated by Fujii (JP 10-308043-A). See provided JPO Abstract Translation and Machine Translation of JP '043

A.

Fujii discloses a magneto-optical recording medium comprising at least a first magnetic layer, a second magnetic layer and a third magnetic layer, which are layered in this order (*JPO Abstract*), wherein said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in the vicinity of a predetermined temperature (*JPO Abstract*), and means for irradiating a light beam to a predetermined temperature during reproduction, thereby heating the first magnetic layer (*Fujii - Figure 1*).

Art Unit: 1773

Fujii fails to explicitly disclose the limitation "said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot".

However, the prior art product is substantially identical in structure and function and is deemed to inherently meet the claimed invention based on Figure 1, above.

Therefore, in addition to the above disclosed limitations, the presently claimed property of "said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot" would have inherently been present because the claimed and prior art products are substantially identical in structure, and the fact that a gaussian temperature profile develops would inherently result in a wide range in wall coercivity values in both the front and rear parts of the light beam.

13. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by applicants' admissions

Applicants admit a magneto-optical recording medium comprising at least a first magnetic layer, a second magnetic layer and a third magnetic layer, which are layered in this order (*page 2, 2nd full Paragraph*), wherein said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in the vicinity of a predetermined temperature (*page 2, 2nd full Paragraph*), and means for irradiating a

Art Unit: 1773

light beam to a predetermined temperature during reproduction, thereby heating the first magnetic layer (*Applicants' Figure 8 and pages 3 - 5*).

Applicants fail to explicitly disclose the limitation "said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot".

However, the prior art product is substantially identical in structure and function and is deemed to inherently meet the claimed invention based on Figure 1, above.

Therefore, in addition to the above disclosed limitations, the presently claimed property of "said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot" would have inherently been present because the claimed and prior art products are substantially identical in structure, and the fact that a gaussian temperature profile develops would inherently result in a wide range in wall coercivity values in both the front and rear parts of the light beam.

14. Claim 18 is rejected under 35 U.S.C. 102(e) as being anticipated by Yonezawa (U.S. Patent No. 6,122,229).

Yonezawa discloses a magneto-optical recording medium comprising at least a first magnetic layer, a second magnetic layer and a third magnetic layer, which are layered in this order (*col. 3, lines 5 - 8 and lines 38 - 52*), and means for irradiating a light beam to a predetermined temperature during reproduction, thereby heating the first magnetic layer (*Figures 2, 2a and 2b*). Yonezawa further disclose that the taught

Art Unit: 1773

magneto-optical recording medium is capable of eliminating "ghost images", which is the reading of a magnetic domain twice (i.e. substantially the same problem solved by applicants – *applicants' specification, pages 6 – 8*).

Yonezawa fails to explicitly disclose the limitation "said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot".

However, the prior art product is substantially identical in structure and function and is deemed to inherently meet the claimed invention based on Figure 1, above.

Therefore, in addition to the above disclosed limitations, the presently claimed property of said first magnetic layer has a larger magnetic wall coercivity at a rear part of the light beam spot than a front part of the light beam spot would have inherently been present because the claimed and prior art products are substantially identical in structure, and the fact that a gaussian temperature profile develops would inherently result in a wide range in wall coercivity values in both the front and rear parts of the light beam.

Yonezawa further fails to explicitly disclose the limitation "wherein said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in the vicinity of a predetermined temperature".

However, the prior art product is substantially identical in structure and intended use (i.e. a DWDD magneto-optical recording medium) and is deemed to inherently meet the claimed limitation.

Therefore, in addition to the above disclosed limitations, the presently claimed property of "said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in the vicinity of a predetermined temperature" would have inherently been present because the claimed and prior art products are substantially identical in structure and intended use.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yonezawa as applied above, and further in view of applicants' admissions.

Yonezawa is relied upon as described above.

Even in the event that the claimed property of "said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in the vicinity of a predetermined temperature" would not have inherently been present in the DWDD magneto-optical recording media taught by Yonezawa, the Examiner notes that applicants' admit that it would have been obvious to utilize a first magnetic film meeting

the claimed limitation in order to form a magneto-optical medium capable of reading out individual recording bits without lowering the readout signal level (*page 3, lines 1 – 9*).

Therefore, even in the event where the limitation “said first magnetic layer is formed of a perpendicularly magnetized film having a relatively small wall coercivity and a relatively large wall mobility compared with the third magnetic layer in the vicinity of a predetermined temperature” would not have inherently been present, it would have still been obvious to one of ordinary skill in the art at the time of the applicant’s invention to modify the device of Yonezawa to meet the claimed property limitations as admitted by applicants in order to form a magneto-optical medium capable of reading out individual recording bits without lowering the readout signal level.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant’s disclosure. Miyamoto et al. (U.S. Patent No. 5,462,811) teach the behavior of the wall coercivity (H_w1) below and above the compensation temperature of magnetic materials (*Figure 11 – lines labeled “ H_w1 ”*). Kaneko et al. (IEEE Trans. Mag., 35(5), 1999, 3112 – 3117) teach a DWDD magneto-optical recording media with the “ghost image” problem removed (*underlined sections*). Takao et al. (U.S. Patent App. No. 2002/0181337 A1) teach a DWDD magneto-optical recording medium wherein the domain walls near the front area and rear area are both moved (*Figure 24*).

Art Unit: 1773


18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (703) 308-1737. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703) 308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



KMB
April 23, 2003



Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700